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09/749,152	12/27/2000	Peter Watts	10774-21U1	5106

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EXAMINER	
TRAN, SUSAN T	

ART UNIT	PAPER NUMBER
1615	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/749,152	WATTS, PETER	
	Examiner	Art Unit	
	Susan T. Tran	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *14-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of applicant's Request for Extension of Time and Amendment filed 10/27/03.

Election/Restrictions

Newly submitted claims 18-25 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the original filed claims recite vaccine as the drug. Claims 18-25 added Markush group of drugs, which are distinct species from the drug originally claimed.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 18-25 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Rashid et al. WO 94/09745.

Rashid teaches a controlled release capsule comprising starch capsule coated with a solution of polyvinyl chloride or a polyvinyl acetate copolymer, or an ethyl cellulose solution (page 7, 1st paragraph). Rashid further teaches the capsule is filled with pharmaceutical active agent, and after 2 to 10 hours of administration, the active agent is released into the patient's gastro-intestinal tract (pages 10-11).

Claims 1, 2, 5-7, 9, 10, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Dansereau et al. US 5,622,721.

Dansereau teaches an enteric-coated oral dosage form, wherein the release of active agent is to the lower gastrointestinal tract (see abstract, column 2, lines 50-65). The dosage form can be an enteric-coated starch or gelatin capsule (column 6, lines 52 through column 7, lines 1-10). The coating includes, polymer or copolymer that dissolves at a pH of 5.5 or above, *e.g.*, Eudragit®, or methacrylic acid polymer-copolymer (columns 9-10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. US 5,670,158, and McNeil et al. US 5,342,624.

Davis teaches pharmaceutical dosage form for colonic delivery comprising drug encapsulated in an enteric-coated capsule (column 6, lines 27-48). The enteric coating comprises pH sensitive material that will dissolve at a pH of above 5, *e.g.*, polymethacrylates (column 9, lines 1-11). Davis does not teach the claimed starch capsule.

McNeill teaches hard gelatin capsule or starch capsule are conventional class of capsules. Hence, it is the examiner's position that gelatin capsule and starch capsule are substantially equivalent, and therefore, it would have been obvious for one of ordinary skill in the art to modify Davis' capsule using the starch capsule, because the references teach the advantageous results in the use of a controlled release device useful to deliver drug to the colon. The expected result would be an enteric-coated starch capsule suitable for colonic delivery to treat colonic diseases

The examiner notes that the references do not teach the coating thickness as defined in claim 8. However, Davis teaches the thickness of the coating depends in the desired rate of dissolution and the site of release. Therefore, it is the position of the

examiner that it would have been obvious to one skilled in the art to manipulate the coating thickness similar to that of the claimed coating thickness, because the references also desired to release the active agent in the colon.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. US 5,670,158, in view of Digenis et al. US 5,672,359.

Davis is relied upon for the reason stated above. Davis does not teach the claimed starch capsule.

Digenis teaches coated hard gelatin capsule made from gelatin or starch or hydrophilic polymer suitable for colonic delivery of peptide drugs (column 4, lines 20-67, column 8, lines 50-57, and examples). Examples of peptide drugs are vaccines and proteins (column 8, lines 58-67). Thus, it would have been obvious for one of ordinary skill in the art to optimize Davis' capsule using the starch capsule in view of the teaching of Digenis, since Digenis teaches that hard gelatin capsule can be gelatin or starch or hydrophilic. The expected result would be a coated capsule useful for colonic delivery.

Claims 2-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rashid et al. WO 94/09745, in view of Dansereau et al. US 5,622,721.

Rashid is relied upon for the reason stated above. Rashid does not teach the claimed coating materials.

Dansereau teaches an enteric-coated oral dosage form, wherein the release of active agent is to the lower gastrointestinal tract (see abstract, column 2, lines 50-65). The dosage form can be an enteric-coated starch or gelatin capsule (column 6, lines 52

through column 7, lines 1-10). The coating includes, polymer or copolymer that dissolves at a pH of 5.5 or above, *e.g.*, Eudragit®, or methacrylic acid polymer-copolymer (columns 9-10). Thus, it would have been obvious for one of ordinary skill in the art to optimize the coating of Rashid using the coating materials in view of the teachings of Dansereau, because the references recognize the advantageous results in the use of delay coating materials suitable to coat starch capsule to release active agent in the intestinal tract.

The examiner notes that the references do not teach the coating thickness as claimed in claim 8. However, Dansereau teaches the coating also achieves the delivery to the active to the lower gastrointestinal tract at a point which can be manipulated by one skilled in the art by choosing the excipients which make up the coating, its type, and/or its thickness. Accordingly, it is the position of the examiner that it would have been obvious for one of ordinary skill in this art to, by routine experimentation determines a suitable thickness for the coating to obtain a desirable release of active agent in a colon.

Response to Arguments

Applicant's arguments filed 10/27/03 have been fully considered but they are not persuasive.

Applicant argues that applicant agrees to the election of a single species for prosecution on the merits that is a vaccine with the understanding that the Examiner will examine the generic claim 1 with respect to the elected species as set forth above, and

upon finding such subject matter allowable, the Examiner will examine the claims directed to each of the non-elected species until all have been found to be allowable. In response to applicant's argument, claims 14-25 have been withdrawn from consideration as being directed to species non-elected by original presentation, and therefore, will not be examined. Nonetheless, upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Rashid et al. WO 94/09745.

Applicant argues that Rashid does not provide a teaching of a capsule that is (1) *entirely* formed of starch, and (2) coated throughout with a coating such that the drug is predominantly released from the capsule in the colon and/or the terminal ileum. In response to applicant's argument that the reference does not show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., capsule that is (1) *entirely* formed of starch, and (2) coated throughout with a coating) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The phrase "a starch capsule containing the drug and wherein the starch capsule is provided with a coating" permits/anticipates the teaching of Rashid. Applicant's attention is called to the abstract

wherein Rashid teaches the capsule contains a pharmaceutically active material; and the prefer embodiment of Rashid on page 7, wherein capsule bodies are hard gelatin or starch capsule bodies coated with a solution of polyvinyl chloride or a polyvinyl acetate copolymer or an ethyl cellulose solution.

Applicant argues that there is no specific teaching or suggestion in Rashid that the hydrogel, which begins to swell as soon as it comes in contact with water after oral administration, delivers the drug to the colonic region, and/or contains a coating such that the drug is predominantly released from the capsule in the colon and/or terminal ileum. However, it is noted that the hydrogel is swelled and expelled from the body after a predetermined time interval for example 2-10 hours to allow the drug to be released into the patient's GI tract (page 11, 3rd paragraph). Similarly, applicant's specification disclosed coating layer is dissolved in about 3-4 hours thereby allowing the capsule to breakup when it has reached the terminal ileum or the colon (page 5, lines 22-24). It is the examiner's position that the GI tract includes any segment of the tract, from the mouth to the anus, including the ileum and/or the colon. Accordingly, GI tract disclosed by Rashid includes the colon region claimed by the applicant, because the time the hydrogel took to allow the drug to release is similar to the time the claimed capsule took to reach the terminal ileum (from 2-10 hours).

Claims 1, 2, 5-7, 9, 10, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Dansereau et al. US 5,622,721.

Applicant argues that the non-specific disclosure by Dansereau of the release in the "lower GI tract", is not necessarily indicative of a coating prepared such that the drug

is released in the terminal ileum or colon. Contrary to the applicant's argument, applicant's attention is called to the definition of the lower GI tract taught by Dansereau (column 4, lines 59-65 and column 5, lines 18-27), Dansereau disclosed lower gastrointestinal tract means the small intestine and the large intestine; and wherein, small intestine includes ileum, and large intestine includes the colon. Accordingly, Dansereau is very specific in his teaching, namely the drug is released in the ileum and/or colon.

Applicant argues that the enteric coating as described by Dansereau is not the same as the claimed coating such that the drug is predominantly released in the terminal ileum or colon. Contrary to the applicant's argument, it is noted that Dansereau used the same coating polymer or copolymer that dissolves at a pH of 5.5 or above, *e.g.*, Eudragit®, or methacrylic acid polymer-copolymer (columns 9-10), as well as the same region where drug is to be released. Accordingly, Dansereau does teach the claimed coating.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. US 5,670,158, and McNeil et al. US 5,342,624.

Applicant argues that the Examiner has failed to meet all necessary elements to establish a *prima facie* case of obviousness based upon the combination of Davis and McNeill, because Davis does not teach a starch capsule, and McNeill does not teach that the entire device bears a coating, or that the entire device is made of a starch capsule. In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of

the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, McNeill is relied upon solely for the teaching of the conventional class of capsule includes starch capsule or hard gelatin capsule. As discussed above, applicant's claim does not exclude the two "interpenetrating pieces" of capsule taught by McNeill. It is also noted that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both, McNeill and Davis teach the same subject matter, namely, a capsule coated with controlled release coating useful for the control release of pharmaceutical active agents.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. US 5,670,158, in view of Digenis et al. US 5,672,359.

Applicant argues that the examiner has failed to establish a *prima facie* case of obviousness based upon the combination of Davis and Digenis, because Digenis teaches a multi-compartment capsule to deliver three or more drugs. In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or

all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applicant's claim does not exclude the "multi-compartment" capsule taught by Digenis. Furthermore, Digenis is relied upon solely for the teaching of *hard gelatin capsule made from starch*. It is also noted that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both, Davis and Digenis teach the use of coated hard gelatin capsule suitable for colonic delivery of peptide drugs. Accordingly, *prima facie* case of obviousness has been established.

Claims 2-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rashid et al. WO 94/09745, in view of Dansereau et al. US 5,622,721.

It is noted by the examiner that there was an error on page 6 of the office action dated 04/23/03. The 103(a) rejection over Rashid et al. WO 94/0974**6**, in view of Dansereau et al. US 5,622,721 should read Rashid et al. WO 94/0974**5**, in view of Dansereau et al. US 5,622,721. Please note the form PTO-892 dated 04/23/03 cited Rashid et al. WO 94/09745. The error has been corrected in this office action.

Applicant argues that there's no motivation to combine Rashid and Dansereau because neither Rashid nor Dansereau disclose a coating such that the drug is

predominantly released from the capsule in the colon and/or the terminal ileum. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). It is noted that Rashid teaches a coated capsule that released drug into the patient's gastro-intestinal tract after 2-10 hours (pages 10-11). Dansereau is even more specific as to the release of active agent in the GI tract, such as the lower GI tract, including ileum and colon.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Tran whose telephone number is (703) 306-5816. The examiner can normally be reached on Monday through Thursday from 6:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3592.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

James M. Spear

JAMES M. SPEAR
PRIMARY EXAMINER
AU 1615
02-06-04